

OWNER
SAN MATEO COUNTY
3401 CSM DRIVE
SAN MATEO CA 94402

ARCHITECT
STEINBERG ARCHITECTS
60 Pierce Avenue
San Jose CA 95110



150 MONTGOMERY STREET, SUITE 715 415-403-3000
SAN FRANCISCO, CALIFORNIA 94104 FAX: 415-778-8900
SAN JOSE • SAN FRANCISCO • NEW YORK/NEW JERSEY
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#1996-2002



BUILDING LIGHTING ACCEPTANCE TESTING AND DOCUMENTATION

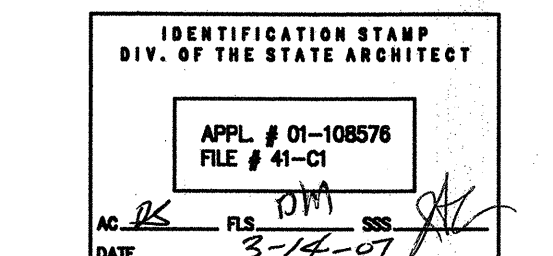
- THIS SECTION DESCRIBES THE ACCEPTANCE TESTING AND DOCUMENTATION OF THE LIGHTING SYSTEM(S) AND OUTLINES THE DUTIES AND RESPONSIBILITIES OF THE CONTRACTING TEAM FOR ACCEPTANCE TESTING.
- THE ACCEPTANCE REQUIREMENTS SHALL BE APPLIED TO ALL PRODUCTS, EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS DIVISION, WHERE INDICATED ON PLANS, AND WHERE REQUIRED BY CALIFORNIA TITLE 24 REQUIREMENTS.
- THE ELECTRICAL CONTRACTOR SHALL ENGAGE THE SERVICES OF A FIRM SPECIALIZING IN COMMISSIONING OF LIGHTING SYSTEMS OR SHALL SUBMIT CONTRACTOR QUALIFICATIONS FOR REVIEW BY ARCHITECT WHERE TESTING AND DOCUMENTATION IS TO BE PERFORMED BY CONTRACTOR.
- THE COMMISSIONING TEAM SHALL BE FORMED AND CONSISTS OF:
 - ELECTRICAL CONTRACTOR'S REPRESENTATIVE
 - LIGHTING CONTROLS MANUFACTURER'S REPRESENTATIVE
 - INSPECTOR OF RECORD
 - OWNER'S STAFF REPRESENTATIVE
- THE ELECTRICAL CONTRACTOR SHALL PLAN, ORGANIZE AND IMPLEMENT THE ACCEPTANCE TESTING PROCESS AND SHALL WITHIN ONE MONTH OF THE AWARD OF THE CONTRACT, SUBMIT THE NAMES AND ADDRESSES OF THE TESTING TEAM MEMBER(S).
- THE ACCEPTANCE TESTING TEAM SHALL SUBMIT A COMPLETE DESCRIPTION OF THE TESTING PROCEDURES AND SYSTEMS TO BE TESTED TO THE ARCHITECT FOR REVIEW.
- THE ACCEPTANCE TESTING TEAM SHALL CO-ORDINATE ALL TESTS OF SYSTEMS AND EQUIPMENT AND ASSEMBLE ALL DOCUMENTATION RELATED TO TESTS. ALL DOCUMENTATION RELATED TO TESTS AND PROPOSED PROCEDURES SHALL BE SUBMITTED TO DESIGN ENGINEER FOR REVIEW PRIOR TO SUBMITTING DOCUMENTATION TO AUTHORITY HAVING JURISDICTION. TEAM SHALL BE RESPONSIBLE FOR PERFORMING DATA ANALYSIS, CALCULATION OF PERFORMANCE INDICES AND CROSSCHECKING OF RESULTS WITH THE REQUIREMENTS OF TITLE 24 AND THE CONTRACT DOCUMENTS. THE INSTALLING CONTRACTOR OR AGENT RESPONSIBLE FOR TESTING AND DOCUMENTATION SHALL RECORD THEIR STATE OF CALIFORNIA CONTRACTOR'S LICENSE NUMBER OR THEIR STATE OF CALIFORNIA PROFESSIONAL REGISTRATION LICENSE NUMBER ON EACH CERTIFICATE OF ACCEPTANCE FOR SUBMITTAL.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR SUBMITTING CERTIFICATE OF ACCEPTANCE INCLUDING PAPER AND ELECTRONIC COPIES OF ALL MEASUREMENTS AND MONITORING RESULTS AND ALL SUPPORTING DOCUMENTATION TO THE AUTHORITY HAVING JURISDICTION. WHERE AUTHORITY HAVING JURISDICTION QUESTIONS RESULTS OR REQUIRES ADDITIONAL TESTING, CONTRACTOR SHALL COMPLETE ADDITIONAL TESTING AND PROVIDE REQUIRED DOCUMENTATION AT NO ADDITIONAL COST TO THE OWNER.
- THE TIME PERIOD OF THE COMMISSIONING OF THE SYSTEMS SHALL BE DETERMINED BY THE GENERAL CONTRACTOR AND ACCEPTANCE TESTING TEAM. IT IS IMPORTANT TO NOTE THAT AUTHORITY HAVING JURISDICTION WILL NOT RELEASE A FINAL CERTIFICATE OF OCCUPANCY UNTIL A CERTIFICATE OF ACCEPTANCE IS SUBMITTED THAT DEMONSTRATES THAT THE SPECIFIED SYSTEMS AND EQUIPMENT HAVE BEEN SHOWN TO BE PERFORMING IN ACCORDANCE WITH THE TITLE 24 STANDARDS.
- TEAM SHALL ASSEMBLE DOCUMENTATION SHOWING ALL LIGHTING FIXTURE LOCATIONS, LIGHTING CONTROL DEVICE LOCATIONS, CONTROL SEQUENCES AND NOTES.
- PER TITLE 24 REQUIREMENTS, TEAM SHALL PROVIDE RECORD DRAWINGS TO BUILDING OWNER WITHIN 90 DAYS OF RECEIVING A FINAL OCCUPANCY PERMIT (REFER TO OTHER SPECIFICATION SECTIONS FOR REQUIREMENTS ON RECORD DRAWINGS.)
- PER TITLE 24 REQUIREMENTS, TEAM SHALL PROVIDE OPERATING AND MAINTENANCE MANUALS TO THE BUILDING OWNER (REFER TO OTHER SPECIFICATION SECTIONS FOR REQUIREMENTS ON OPERATION AND MAINTENANCE MANUALS.)
- TEAM SHALL REVIEW THE INSTALLATION, PERFORM ACCEPTANCE TESTING AND DOCUMENT RESULTS FOR THE FOLLOWING SYSTEMS:
 - OCCUPANCY SENSORS
 - MANUAL DAYLIGHT CONTROLS
 - AUTOMATIC DAYLIGHT CONTROLS
 - AUTOMATIC TIME SWITCH CONTROLS
- REVIEW OF INSTALLATION SHALL CONFIRM LIGHTING FIXTURES AND LIGHTING CONTROLS ARE PROPERLY LOCATED, IDENTIFIED, CALIBRATED, AND SET POINTS AND SCHEDULES PROGRAMMED PER CONTRACT DOCUMENT REQUIREMENTS.
- TEAM SHALL DOCUMENT OPERATING AND MAINTENANCE INFORMATION, COMPLETE INSTALLATION CERTIFICATE, AND INDICATE TEST RESULTS ON THE CERTIFICATE OF ACCEPTANCE, AND SUBMIT THE CERTIFICATE TO THE AUTHORITY HAVING JURISDICTION PRIOR TO RECEIVING FINAL OCCUPANCY PERMIT. TEAM SHALL SUBMIT FORMS LTG-1-A THROUGH LTG-3-A AS REQUIRED BY TITLE 24 REQUIREMENTS.
- REFER TO CALIFORNIA TITLE 24, NON-RESIDENTIAL MANUAL FOR SPECIFIC TESTING PROCEDURES AND DOCUMENTATION REQUIREMENTS. THE DETAILED REQUIREMENTS CAN BE FOUND AT <HTTP://WWW.ENERGY.CA.GOV/TITLE_24/2005STANDARDS/INDEX.HTML>. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND COMPLYING WITH THESE STANDARDS

PORTABLE LIGHTING WORKSHEET		LTG-3-C				
PROJECT NAME Skyline College - Swing Space Project		DATE 1/25/2007				
TABLE 1 - PORTABLE LIGHTING NOT SHOWN ON PLANS FOR OFFICE AREA > 250 SQUARE FEET						
A	B	C	D			
ROOM # OR ZONE ID	DEFAULT	AREA (SF)	TOTAL WATTS (BxC)			
N/A	0.2		0			
TOTAL		0	0			
TABLE 2 - PORTABLE LIGHTING SHOWN ON PLANS FOR OFFICE AREA > 250 SQUARE FEET						
A	B	C	D	E	F	G
ROOM # OR ZONE ID	PORTABLE LIGHTING DESCRIPTION(S) PER TASK AREA	LUMINAIRE(S) WATTS PER TASK AREA	TASK AREA (SF)	NUMBER OF TASK AREAS	TOTAL AREA (SF) (D x E)	TOTAL WATTS (E) (C x F)
TOTAL					0	0
TABLE 3 - PLANS SHOW PORTABLE LIGHTING IS NOT REQUIRED FOR OFFICE AREAS > 250 SQUARE FEET						
ROOM # OR ZONE ID	TOTAL AREA (SF)	Designer needs to provide detailed documentation that the lighting level provided by the overhead lighting meets the needs of the space. The details include luminaire types and mounting locations relative to work areas.				
TOTAL AREA		0				
BUILDING SUMMARY						
BUILDING SUMMARY	TOTAL AREA (SF)	TOTAL WATTS				
BUILDING TOTAL (SUM OF TABLES 1,2,3)	0	0				
Enter in LTG-2-C: Portable Lighting						
2005 Nonresidential Compliance Forms April 2005						

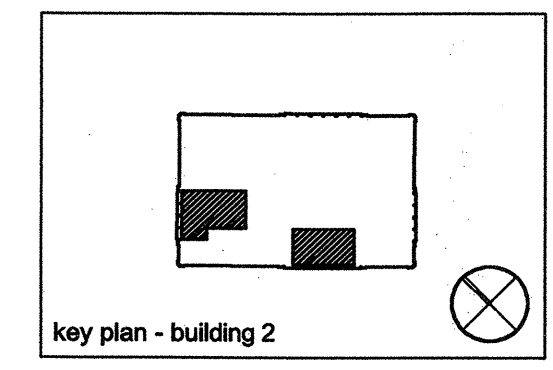
INTERIOR LIGHTING POWER ALLOWANCE		LTG-5-C	
PROJECT NAME Skyline College - Swing Space Project		DATE 1/25/2007	
ALLOWED LIGHTING POWER (Choose One Method)			
COMPLETE BUILDING METHOD			
BUILDING CATEGORY (From § 146 Table 146-B)	WATTS PER SF	COMPLETE BLDG AREA	ALLOWED WATTS
AREA CATEGORY METHOD			
A	B	C	D
AREA CATEGORY (From § 146 Table 146-C)	WATTS PER SF	AREA (SF)	ALLOWED WATTS
Classroom 2106	1.2	1348	1618
TOTALS		1348 AREA	1618 WATTS
TAILORED METHOD - CONDITIONED SPACES			
		TOTAL ALLOWED WATTS (From LTG-6-C) <input type="text" value="0"/>	
UNCONDITIONED SPACES			
A	B	C	D
Complete Building and Area Category Methods CATEGORY (From § 146 Table 146-B & C)	WATTS PER SF	AREA (SF)	ALLOWED WATTS
TOTALS		AREA	WATTS
TAILORED METHOD - UNCONDITIONED SPACES			
		TOTAL UNCONDITIONED SPACES ALLOWED WATTS (From LTG-5-C and LTG-6-C) <input type="text"/>	
2005 Nonresidential Compliance Forms April 2005			

LIGHTING MANDATORY MEASURES

<input checked="" type="checkbox"/> Shut-off Controls All interior lighting systems shall be equipped with a separate automatic control to shut off the lighting. This automatic control shall meet the requirements of Section 119 and may be an occupancy sensor, automatic time switch, or other device capable of automatically shutting off the lighting.	<input checked="" type="checkbox"/> Area Controls Each room and area in this building is equipped with a separate switch or occupancy sensor device for each area with floor-to-ceiling walls.
<input checked="" type="checkbox"/> Automatic Control Devices Certified All automatic control devices specified are certified, all alternate equipment shall be certified and installed as directed by the manufacturer.	<input checked="" type="checkbox"/> Multi-Level Lighting Controls All rooms and areas greater than 100 square feet and more than 0.8 watts per square foot of lighting load shall have multi-level lighting switching for uniform reduction of lighting within the room by dimming all lamps or switching alternate lamps or luminaires.
<input checked="" type="checkbox"/> Fluorescent Ballast and Luminaires Certified All fluorescent fixtures specified for the project are certified and listed in the Directory. All installed fixtures shall be certified.	<input type="checkbox"/> Daylit Areas All rooms with windows and skylights, that are greater than 250 square feet, and that allow for the effective use of daylight in the area shall have 50% of the lamps in each daylight area controlled by a separate switch, and provide separate switching between vertically daylight and horizontally daylight areas.
<input type="checkbox"/> Display Lighting Display lighting shall be separately switched on circuits that are 20 amps or less.	<input type="checkbox"/> Control of Outdoor Lighting All outdoor lighting shall be controlled by a photocell or astronomical time switch that automatically turns off the lights when daylight is available and allow for reduction of lighting load by at least 50%.
<input type="checkbox"/> Luminaire Cutoff Requirements All outdoor luminaires with lamps greater than 175 watts shall be designated Cutoff for light distribution, where the candela per 1000 lamp lumens does not exceed 25 cd or above 90 degrees above nadir.	<input type="checkbox"/> Outdoor Lighting Over 100 Watts Exterior lighting attached to or powered by the electrical service to the building have a minimum efficacy of 60 lumens/watt.



02.02.07 DSA SUBMITTAL
DSA BACKCHECK
rev. date issue



STEINBERG ARCHITECTS
project no: 06044 date: 03/15/07
drawn by: VB checked by: DL
scale: 1/4"=1'-0"

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